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mented them by a study of the ideals of the early Roman bishops, and of the positive influence exerted by them upon the church at large, his essay would have had greater historic interest.

Of the other papers in the volume it is not necessary to speak here. The most interesting and instructive is the one upon The Celtic Churches in the British Isles, a subject dear to Professor Bright's heart, and one upon which his special studies qualify him to speak with peculiar authority.

A. C. MCGIFFERT.

*A History of the Warfare of Science with Theology in Christendom.*

By ANDREW DICKSON WHITE, LL.D., L.H.D., late President and Professor of History at Cornell University. (New York : D. Appleton and Co. 1896. Two vols., pp. xxiii, 415 ; xiii, 474.)

THE writer of this notice, being no student of history except that of science, including philosophy, ought to apologize for undertaking to review this book. The truth is, when he promised to do so, he supposed it would be chiefly a history of science. It turns out to be nothing of the sort ; but a history of how theologians have met those discoveries of science which have been in conflict with their teachings. All this seems to be told with fulness and accuracy, evidently after mature research.

The book lies far away from the studies of the peaceful student of science. It is a controversial work. Nor does it dispute theoretical positions merely. It is one of the fruits of a hand-to-hand struggle over the studies at the Cornell University. The author tells us in his preface how it came to be written. At the establishment of that institution he had been careful to insert stringent provisions in its charter calculated to prevent its ever falling under the control of any "single religious sect." "Opposition began at once," and "as the struggle deepened, hostile resolutions were introduced into various ecclesiastical bodies." He first "fully tried" "sweet reasonableness" ; but finding that of no avail, he entered upon the series of writings, of which the present volumes are the recension and completion.

Matter written in the course of a bitter struggle cannot possibly be philosophically judicial. Coming from the losing side, it must be unphilosophically abusive ; coming from the winning side, the wiser it is, the more certain it will be to carry conciliation further than philosophical truth requires. Moderation and diplomacy have marked President White's course throughout. As a work of controversy, his review of the long series of events is simply pulverizing ; and that is its essential character.

Upon the evolution of scientific thought and observation no light is shed. Each chapter narrates how some dogma of the Church has been fought over more and more savagely, how next the theologians have proposed modes of reconciliation, and how finally they have endeavored with great ingenuity to explain away their former dicta. Owing to this mode of

subdivision, the lively tone of controversy, and certain circumstances of the composition, the effect is somewhat that of a series of papers. Repetitions are noticeable ; and the same situations are regarded a little differently in different places.

Chapter I. shows how the old doctrine of an instantaneous or speedy creation out of nothing a few thousand years ago by a man-like creator has been displaced by the conception of a very slow evolution from nebular matter many millions of years ago under mechanical forces. Chapter II. explains the Biblical geography. Chapter III. describes the infantile monkish astronomy, and gives an account of Copernicus and of the treatment of Galileo. Chapter V. relates to comets. Chapters VI. and VII. show how the high antiquity of man has come to be admitted in consequence, on the one hand, of discoveries in Egypt and Assyria, and on the other of prehistoric archæology. Chapters VIII., IX., X., show how the dogma of the Fall of Man has been refuted, first, from prehistoric remains, secondly, from the study of existing races, and thirdly, from history. Chapter XI. shows how storms were formerly attributed to evil spirits ; how prayers, exorcisms, relics, processions, and the ringing of hallowed bells were the recognized defences against lightning ; and how these practices have been superseded everywhere by the use of the lightning-rod. Chapter XII. gives a slight sketch of magic, of what the author calls the "theological theory of gases," and of other chemical matters ; and it is shown that those ideas have been completely exploded. Chapter XIII. is devoted to the study of the percolation into theological brains of good sense and science about medicine. The topics here are a multitude ; and several single paragraphs might advantageously be expanded into chapters. Chapter XIV. shows how the Church used to sanctify dirt, but how modern sanitation has triumphed. Chapters XV. and XVI. cover the extensive subject of insanity, the former treating individual lunacy, the latter endemic outbreaks. Chapter XVII. tells how the dogma of the Confusion of Tongues has been exploded by comparative philology. Chapter XVIII. treats the legends relating to the Dead Sea. Chapter XIX. sets forth the theological tergiversations about usury. Chapter XX. gives a history of the criticism of the Bible. But the author fails to use this history, as he should have done, to show that dogmatism, or what comes to much the same effect, gregariousness of thought, is not confined to theology, by explaining how the critics have often been led to carry their denials too far. It is not consistent in a prophet of candor thus to resort to suppression in order to veil the fact that science is not infallible.

The book is in effect a score of terrible pamphlets, dealing death to the dunce-spirit that endeavors to barricade the roadway of science. The author himself, in the first words of his preface, teaches us so to regard it ; adding, however, that his purpose is not a purely philosophical one, but that he designs, by doing this in time, to prevent unnecessary damage to Christianity. With this intent, he often uses conciliatory phrases which, it may be feared, will exert little force in stemming the flood which he

dreads. How shall Christianity be defined? Shall we go back to the common matter of the synoptical gospels? In that, we find little else than miracles. Shall we rely upon the universal understanding, by Christians, of the essence of their own religion? If so, that religion adds to the general doctrine of love wherein it agrees with other Buddhistoidal beliefs, the distinctive doctrine of resurrection by the might of Jesus Christ. Can President White think his book favorable to that doctrine? He tells us (I. 22) that "the Bible is true." This sounds like practising upon—or exhibiting—that very *sancta simplicitas* at which he has been laughing three pages before. He informs us that in consequence of the revolution whose history he narrates, "our great body of sacred literature is only made more and more valuable" (II. 208). He speaks of "the exact teaching of the Holy Ghost." He quotes, with seeming approval, the formula of Le Clerc, "Our Lord and his apostles did not come into this world to teach criticism to the Jews, and *hence* spoke according to the common opinion." But his own history affords instances enough to suggest that this conciliatory "*hence*" comes too late, now, to be accepted.

Many a cultured reader of this *History* will assume that he reads here something of the true history of science. That is because the heart of the scientific man is not comprehended by men of affairs. The one consuming passion of that heart is to *learn*; and to desire to learn implies a desire to change one's mind. The impulse to communicate what he has learned, strong as that naturally is, together with all those desires whose aggregate makes up the love of life, are not, in the true man of science, comparable in intensity with his paramount passion. This is by no means an ideal representation; it is a faithful portraiture of that man, as he lives and has lived in all ages; and his life proves it. For that reason, the history of the troubles of scientific men in their collisions with outsiders is no part of the life of science, and hardly touches it. It would, therefore, be a misuse of this book to consult it for the history of science; it is of no moment that President White regards science altogether from an exterior standpoint, and is not of much consequence that his assertions here and there involve misjudgments of scientific history. Such misjudgments are neither frequent nor serious.

It seems to have been no part of President White's purpose to trace the causes, nor even to analyze the essence, of what he calls the theological position. Yet these things come properly within the scope and power of history; and the history of the great revolution of belief will not have been philosophically expounded until such questions have received their answer.

One essential difference between the scientific and theological attitudes is plain. The scientific man is animated by a passion to *learn*,—to learn the truth, which is for him that which "will out," that to whose overwhelming power all minds must bow, at last; while the rage of the theologian is to *teach*,—to teach men to behave as he feels they ought to behave. To be thoroughly zealous in this last pursuit implies perfect

confidence that one knows already all that need be known concerning the matter of the teaching. The priests are wont to call to their aid every innocent passion which can serve their purpose, — men's fears, hopes, love of ease, shame, etc. But their experience in all climes and ages shows that, for the majority of men, no motive is stronger than the spirit of fidelity to sentiments inculcated in childhood. Thus, to continue to believe what he has believed becomes, for the religious man, the first of virtues. The scientific man, on the other hand, holds every opinion lightly and provisionally, ready at every moment to dump his whole stock of beliefs, should the evidence prove decidedly against them.

Men who only know science in its results, not in its formative life, are apt to picture the typical scientific man as a sort of nominalist, pooh-poohing every proposition not plain, intelligible, definite, as simple as possible, and free from mysticism. But history will not bear this out. Indeed, a thinker can win no ground in any department if he be afraid of harboring ideas which, as they first come to him, are vague and shadowy. As a method, scientific men do indeed object to mysticism; but they have no rooted dislike to any theory because of any character of its substance. They will not even refuse to entertain a grossly improbable hypothesis, so long as it possesses the one merit of being the theory which is at the moment most conveniently and economically compared with observation. A successful investigator occupies the larger part of his time with theories of all degrees of improbability; for he expects to reject the larger proportion of those which he cordially receives on trial. The science which he is helping to develop has the ages to come at its disposition; and an orderly line of examination must be pursued, no matter how slow it may be. The only positions which are in his eyes in themselves anti-scientific are such as would tend to cut off inquiry. The theologian, on the other hand, is in the situation of any other practical man. The time to act has come, and he must select, as well as he can and for good, the theory upon which he will act. That one must be embraced and its denial spurned. He cannot stop to dally with improbabilities.

These are the most important respects in which history shows the scientific and the religious mind to be at variance, and much follows from this variance. President White manifests a disposition to concede that theologians have as sincere a love of truth as scientific men. This may be a judicious diplomatic concession, but it is not the verdict of history. The religious mind wants the very feeling of truth that lies at the bottom of the inquirer's heart; namely, of truth as an awful and stupendous power listening to no prayers and not to be withstood. For, had they this conception, the devout would never dream that one doctrine could be put down and another set up by any machinery or organization whatsoever. Deficient love of truth appears in every department, in every book, throughout the period of faith which intervened between Greek and modern science. President White gives facts enough to illustrate this; such as St. Augustine's averring (II. 23) that peacock's flesh will not

decay, that he has tested it and knows it to be a fact. Let exaggeration, falsification, forgery, be pardoned and excused, if President White inclines to such leniency ; but they remain evidences of deficient love of truth. So are those suppressions which have given rise to the English Church proverb that "he may hold anything who will hold his tongue" (II. 334) ; and so is avoidance of crucial tests, such as the clergy betrayed upon Tyndall's honest proposal of a prayer-test. The story of Elijah and the priests of Baal illustrates how honest love of truth would have met such a proposal. The very rating of "fidelity" to a belief as a virtue, the holy horror of doubt, the anger at or fear of contradiction, are so many unmistakable signs of a want of desire to find out the truth. And these are not so much faults of the theologian as they are essential characters of the religious mind.

If we look into the origins of opposition to science, history will show us that it has, in different cases, at least four different sources. The first is simply conservatism, the unreasoning dislike and dread of new ways. No sensible man will deny that this feeling, in moderation, is wholesome ; and in proportion as people are ignorant a larger measure of conservatism is advantageous. Morality is even more dependent on conservatism than religion itself. We certainly ought not to blame the Church for being conservative, since that is one of its chief utilities. Unfortunately, conservatism is essentially unintelligent ; for were it intelligent it would cease to be genuine conservatism, which is just the needed counterpoise to activity of thought. Naturally, then, when anything new is proposed in a community in which conservatism has not unhappily been swept away, the blessed stupids will raise a great outcry. They cast about for some effective weapon, and, as a matter of course, look to religion, the great conservative power, to protect the people. Texts of the Bible are brought forward, and every effort is made by the dullards to enlist their friends, the clergy, on their side. Such, for example, were the phenomena at the discovery of anesthetics, as the writer of this himself well remembers ; and such, doubtless, they have been in many conjunctures. It is hardly just to say that *theology* is at fault for such opposition to science as this. A principle of human nature is at the bottom of it, and a right wholesome principle too. "A radical, myself, from top to toe," said somebody, "I am very glad there is some conservatism among my fellow-citizens, and only wish there were more." Some recent examples, Huxley and others, have made men associate science with radicalism ; but, as a general rule, scientific men have been cautious, if not conservative, about far-reaching measures, until all the circumstances had been studied.

The second source of opposition to scientific discoveries lies in certain beliefs which, though not perhaps themselves implanted in human nature, are intimately associated with natural sentiments, or, at least, are inheritances or traditions from primeval man. Such, for instance, is the hostility to the idea that we are descended from apes. Many such prejudices have no further connection with theology than this, that they are likely to be

reflected in any collection of ancient literature as extensive as the Bible. Others, such as the belief in Heaven and Hell, seem to have a special affinity to the religious mind. But even they are rather data than fruits of theology.

The third source of opposition to scientific discoveries lies in opinions formerly drawn by scientific reasoning, with more or less logic, from such data as were available at the time those opinions were formed. Such, for instance, was Claude Bernard's dictum that a disease is not an entity, but only an aggregate of symptoms, which, having become ingrained in the minds of physicians, retarded for several years the general acceptance by the medical profession of Pasteur's bacteriological conclusions, after these views ought logically to have been accepted. This is simply dogmatism founded on old science, the hard wood obstructing the movement of sap, the skull preventing the growth of the brain. Dogmatism is usually stronger the older it is. Those same Chaldeans who made the beginnings of that astronomical theory which, having undergone certain modifications, is admired to-day as the most perfect of sciences, also busied themselves about the evolution of the universe. Two of their tentative theories, somewhat simplified, were incorporated into the first chapters of Genesis. The dogmatism that resulted from that dead science in course of time acted as an obstruction to living science, just as Claude Bernard's science, hardened into prejudice, obstructed bacteriological medicine. Certainly theology was guilty in this case; but it was only guilty of having dogmatized obsolete science. Theology dogmatizes because religion demands party fealty, which it apotheosizes under the name of Faith. Religion itself is the prime cause of the difficulty; but this is no more an argument against religion than the first kind of opposition to science is an argument against conservatism.

The fourth source of opposition to scientific discoveries is distrust of "circumstantial evidence" as opposed to "direct evidence." There can be no doubt that this has been quite as much fostered by law as by theology. Historians and philologists have, down to within very recent times, preferred extremely imperfect documentary evidence to any monumental evidence which was at all indirect or "inferential." Flinders Petrie, for example, wrote a book entitled *Inductive Metrology*, in which he investigated the ancient weights and measures after the method (much improved) of Isaac Newton. Now the only documentary evidence there is upon the subject comes from writers of whom (with trifling exceptions) Eusebius is far the best and earliest, and it bears strong internal evidence of having been adjusted to a system which was an afterthought. Yet one might hunt long to find a reference by a historian or philologist to Petrie's book as a surer guide than the compendium of Hultsch, founded on the documents. What wonder, then, that theologians should be found to prefer the direct testimony of the sacred historians to the inferences of science!

The Church claims infallibility. In the eyes of science, which nowadays doubts the very axioms of geometry, such a claim is monstrous. Yet

did it rightly understand itself, it were no more than every man claims when he says, for example, that it is wicked to marry one's sister; for he will listen to no argument on the subject. He will, indeed, permit the student of ethics to discuss the precept; and is willing, in advance of the practical emergency, to be influenced by his studies; but he will not listen to argument on the occasion of the question taking a practical shape. At that moment his conscience claims momentary infallibility, and will entertain no new doctrine. The Church claims infallibility in what respect? In respect to the conduct of the faithful, including their mental conduct. Infallibility being limited to that, and no more being claimed, merely means that the faithful ought not to do or believe what the Church forbids, if they can help it. It does not follow from this that the injunction can never on another occasion be reversed. Limited, as it is, to the conduct, bodily and mental, of the faithful, it is only *practical* infallibility. Let it recognize itself to be of that nature; let it, in an age that measures the distances of the fixed stars, not claim to be immeasurably certain; let it be wisely exercised and not attempt to stretch itself beyond the bound which the nature of the human mind forbids it to transgress, under pain of futility and everlasting ridicule: let it promise not to interfere with the free work of science, and it may even yet recover the respect of mankind.

*A History of Auricular Confession and Indulgences in the Latin Church.* By HENRY CHARLES LEA, LL.D. (Philadelphia: Lea Brothers and Co. 1896. Three vols., pp. xii, 523; viii, 514; viii, 629.)

EVERY work from the pen of Dr. Lea is awaited by students of church history with eager and confident expectation. Not only is he the first American scholar in this field, but for command of material and thoroughness of investigation he has there no living superior. The volumes now before us will not disappoint this expectation. They separate naturally into two parts, the first two being devoted to the former of the subjects named in the title, the auricular confession, while the third contains the treatment of indulgences. Considering first the subject of confession, we find that the central point of Dr. Lea's interest in these two volumes is the nature of the Roman ethical theory. His treatment of the institution of the confessional is really only a basis and an illustration of this larger idea. He is not primarily concerned with the obvious dangers of an institution through which a class of highly trained human guides undertakes to govern the conduct of all the rest of mankind, though he is plainly interested in this aspect of the case as well. Rather he desires to examine the principles according to which this class of professionals try to determine in specific cases what a human being may properly do and leave undone.

Obviously we are not here concerned with exact science. The data of